

Appl. No. : **10/742,124**
Filed : **December 19, 2003**

AMENDMENTS TO THE DRAWINGS

In addition to the Office Action, Applicants have received a Notice of Draftperson's Patent Drawing Review, objecting to the drawings provided with the original application. In response, Applicants submit herewith two sheets of replacement drawings, attached in an appendix. Please replace current sheets 1-2 with attached replacement sheets 1-2. No new matter has been added by these replacement sheets.

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REMARKS

Claims 15-21 have been allowed by the Examiner. By this paper, Applicants have amended Claims 1 and 10. These amendments were made for the purposes of clarification, and were not made for the purposes of patentability. Thus, Claims 1-14 remain pending and presented for examination.

I. Discussion of Rejection of Claims 1-10 and 12-13 under 35 U.S.C. § 102(e)

The Examiner has rejected Claims 1-10 and 12-13 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,491,063 to Benetav (hereinafter "Benetav"). *Office Action*, Page 2, para. 2. In rejecting these claims, the Examiner stated:

Benetav discloses organs 34, 40, and 20 that control the shutting of flow conduits located in 10 as claimed wherein the organs are controlled by a common actuator 31 and 33 as claimed, using a gear transmission with a reduction gear ratio between 34 to 40 as disclosed on col. 7, line 56 to col. 8, line 6, with cams causing an actuation lag or difference in the rotation coefficients between 40 to 20 as disclosed on col. 8, lines 7-19. *Id.*

It is well settled that a "prior art reference anticipates a claim only if the reference discloses, either expressly or inherently, every limitation of the claim." *Rowe v. Dror*, 112 F.3d 473, 42 U.S.P.Q. 2d 1550 (Fed. Cir. 1997) In order to anticipate the claim, "the [prior art] reference must describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it." *In re Spada*, 911 F.2d 705, 15 U.S.P.Q. 2d 1655 (Fed. Cir. 1990) Moreover, "[t]o serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence [which] must make clear that the missing descriptive matter is *necessarily present* in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Continental Can Company USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 20 U.S.P.Q. 2d 1746 (Fed. Cir. 1991) (emphasis added).

Applicant's submit that the Benetav reference fails to disclose, either explicitly or inherently, every element of amended independent Claims 1 and 10. Claim 1, as amended, recites "at least two shutter organs for shutting one section for the passage of the flow," and "a transmission configured to obtain slightly different proportionality coefficients for the motion of

said organs.” Claim 10 recites “providing a shutter device comprising organs for shutting a section thereof” and a “transmission providing a slightly different proportionality coefficient for each of the organs.” Applicants note that embodiments of the present invention are directed to a device for controlling flow through a section through the use of at least two shutter organs. When the proportionality coefficients for each of said shutter organs are slightly different, the flow through the section can be controlled with a very high degree of precision.

In contrast, the device of Benatav is directed to “valve assemblies for controlling the flow of a fluid between a plurality of ports.” *Benatav*, col. 1, ll. 7-8. The embodiment which is the focus of Benatav is a four-way changeover valve assembly in an air conditioning system, and a method for operating the same. *Benatav*, col. 1, ll. 9-11. The device of Benatav comprises a valve member 20, which is coupled to a coupling disk 40 via a lost-motion coupling, and also comprises a disk 34, the rotation of which can be controlled by an external disk 33 turned by a motor 31. The rotation of disk 34 is transmitted via coupling disk to valve member 20 by means of a drive gear carried by disk 34 and a step-down transmission coupled to the coupling disk 40.

The valve member 20 comprises a pair of concentric rib formations 21, 22 on its control face. The inner rib 21 defines an inner low pressure cavity, and the outer rib 22 defines a high pressure cavity surrounding the low pressure cavity. A small hole 25 is formed through the high pressure section of the valve member 20, and a larger hole 26 is formed through the low pressure section of the valve member. Coupling disk 40 further comprises pilot valve elements 44, 45. In one position, in which the large hole 26 is blocked by a pilot valve element, the high pressure comes through the unblocked hole 25 and presses against the opposite face of the valve member 20, pressing it against a fixed base 10 and preventing rotation of the valve member.

As noted above, the coupling disk 40 is coupled to the valve member 20 via a lost-motion coupling, which permits a slight rotation of the coupling disk 40 relative to the valve member. The coupling disk can thus be rotated to a position wherein the flow through the large hole 25 is opened and flow through the small hole 26 is blocked, permitting the high pressure to escape through hole 26. The release of the high pressure from the opposite face of the valve member permits movement of the valve member in conjunction with movement of the coupling disk, and the valve member is moved to alter the flow of the air by changing which of the four ports are connected via the cavities in the valve member.

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Applicant first submits that the Benatav reference does not disclose a transmission configured to obtain slightly different proportionality coefficients for the motion of said organs, as recited in Claim 1, or a transmission providing a slightly different proportionality coefficient for each of the organs, as recited in Claim 10. Applicant first notes that the disk 34 cannot be considered to be a shutter organ, as it does not impede passage of a flow. To the extent that the Examiner may consider the coupling disk 40 to be a shutter organ, Applicants respectfully submit that the transmission never provides a slightly different proportionality coefficient for the valve coupling disk and the valve member 20. Initially, when the coupling disk 40 is permitted to move relative to the valve member, there is no proportionality between the movement of the coupling disk and the valve member, as the valve member remains stationary, held in place against the fixed base by the high pressure against the opposite face of the valve member. Then, when the valve member is permitted to move due to the release of the high pressure through the hole 26, the valve member is coupled to the coupling disk, and thus the valve member and the coupling disk have exactly the same common proportionality coefficient relative the actuator.

Depending on the stage of the change-over operation, there is therefore either no proportionality between the motion of the actuator and the motion of the valve member, or there is exactly the same proportionality coefficient for both the valve member and the coupling disk. Applicants respectfully submit that the Benatav reference discloses neither a transmission configured to obtain a slightly different proportionality coefficients for the motion of said organs, nor a transmission providing a slightly different proportionality coefficient for each of the organs.

In addition, Applicants submit that the Benatav reference does not disclose, either explicitly or implicitly, at least two shutter organs for shutting one section, as recited in Claim 1, or at least two shutter organs for shutting a section, as recited in Claim 10. The coupling disk 40 is not used to shut any of the 4 main ports of the Benatav device. At best, it is used to shut the holes 25, 26 in the valve member 20 through the use of pilot valve elements 44, 45. However, if the holes 25, 26 are considered to be sections, than the valve member 20 cannot be considered a shutter organ for shutting those sections, as those sections are holes through the valve member itself, and thus unable to be shut by the valve member.

Therefore, for at least the reasons discussed above, Applicants respectfully submit that independent Claims 1 and 10 are not anticipated by Benatav. As rejected Claims 2-9 and 12-13

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depend from Claims 1 and 10, Applicants respectfully submit that they are not anticipated by Benatav for at least the reasons discussed above.

II. Discussion of Rejection of Claim 14 under 35 U.S.C. § 103(a)

The Examiner has rejected Claim 14 under 35 U.S.C. § 103(a) as obvious over Benatav.

In rejecting Claim 14, the Examiner stated that:

Benatav discloses the use of a valve for control fluid flow in an air conditioning system, but does not disclose the use of the air conditioning system in an aeronautical vehicle. However, the examiner takes official notice that it is well known in the art to place air conditioning systems, such as the air conditioning system disclosed in Benatav, on airplanes for the purpose [of] controlling the environment on the airplane for the comfort of the passengers. *Office Action, page 3, para. 4.*

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991) Second, there must be a reasonable expectation of success. *Id.* Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations. *Id.* The initial burden is on the Examiner to provide some suggestion of the desirability of doing what the inventor has done. *See* M.P.E.P. § 706.02(j) If the reference does not suggest the claimed invention, the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Inter. 1985).

As Claim 14 depends from independent Claim 10, discussed above, Applicant respectfully submits that Claim 14 is patentable over Benatav at least for the reasons discussed with respect to Claim 10. Furthermore, the modification of the Benatav system to place the air conditioning system on an airplane does not cure the deficiencies discussed with respect to Claim 10. Thus, Applicant respectfully submits that Claim 14 is not obvious over Benatav.

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III Allowable Claims

In the Office Action, the Examiner indicated that Claims 15-21 were allowable. *Office Action, page 3, para. 5.* Applicant thanks the Examiner for the examination and allowance of Claims 15-21.

IV. Conclusion


Applicants respectfully submit that independent Claims 1 and 10 are patentable over Benatav for at least the reasons discussed above. As objected-to Claim 14 and rejected Claims 2-9 and 12-13 depend from Claims 1 and 10, Applicants respectfully submit that they are patentable over Benatav for at least the reasons discussed above. Applicant therefore requests withdrawal of the rejections of Claims 1-10 and 12-14, and the objection to Claim 11, and allowance of pending Claims 1-14 in their present state. As Claims 15-21 have been allowed by the Examiner, Applicants respectfully submit that all pending Claims 1-21 are in condition for allowance.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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AMEND

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